

### **REMARKS**

Claims 1-13 are pending in the application. Reconsideration and allowance are respectfully requested in view of the following remarks.

#### **Personal Interview**

Applicants thank Examiner Kastler for the courtesies extended in the personal interview with their undersigned representative on August 17, 2006. During the interview, the method of determining the depletion of Al and Cr of a  $\gamma/\gamma'$  MCrAlY-coating of a component after use in a high temperature environment recited in claim 1 was discussed. It was agreed that the "defined annealing heat treatment" recited in claim 1, which is applied to the ex-service  $\gamma/\gamma'$  MCrAlY-coated component as part of the claimed method, is neither disclosed nor desired by G. Antonelli, "Non-Destructive Condition Assessment of Serviced MCrAlY Coatings" ("Antonelli"), or G. Antonelli et al., "Qualification of a Frequency Scanning Eddy Current Equipment for Nondestructive Characterization of new and Serviced High-Temperature Coatings" ("Antonelli et al."), for the assessment of MCrAlY coatings.

#### **Obviousness-Type Double Patenting**

Claims 1-13 stand rejected under the doctrine of obviousness-type double patenting over claims 1-13 of U.S. Application No. 10/726,608.

A Terminal Disclaimer with respect to the '608 application is submitted herewith. Applicants submit that the Terminal Disclaimer obviates this rejection. Therefore, withdrawal of this rejection is respectfully requested.

**Rejection Under 35 U.S.C. § 103**

Claims 1-13 stand rejected under 35 U.S.C. § 103(a) over Antonelli or Antonelli et al. in view of “admitted prior art of the instant disclosure” (“APA”). The rejection is respectfully traversed.

Claim 1 recites a method of determining the depletion of Al and Cr of a  $\gamma/\gamma'$  MCrAlY-coating of a component after use in a high temperature environment. The method comprises, *inter alia*, (a) using a component having a  $\gamma/\gamma'$  MCrAlY-coating in a high-temperature environment, (b) cooling the component to a temperature lower than the operation temperature, (c) applying a defined annealing heat treatment to the  $\gamma/\gamma'$  MCrAlY-coated component to transform the non-equilibrium high temperature  $\gamma/\gamma'$ -microstructure into the equilibrium room temperature microstructure with a  $\alpha$ -Cr phase, (d) measuring qualitatively impedance curves or the electrical conductivity and magnetic permeability of the MCrAlY-coating by means of a multi-frequency eddy current system, and (e) determining the Al and/or Cr depletion of the coating (emphasis added).

The inventors unexpectedly determined that the method recited in claim 1 provides improved NDT coating assessment. By subjecting a component including a  $\gamma/\gamma'$  MCrAlY-coating to the defined annealing heat treatment recited at (c) in claim 1 to transform the non-equilibrium high temperature  $\gamma/\gamma'$ -microstructure into the equilibrium room temperature microstructure with a  $\alpha$ -Cr phase, after using the component in a high temperature environment, i.e., with the coating in a post-service condition, before (d), a non-destructive testing method can be used to determine Al and/or Cr depletion within the  $\gamma/\gamma'$  MCrAlY-coating in an improved manner.

The applied art fails to suggest the combination of features recited in claim 1, including, *inter alia*, the defined annealing heat treatment. As discussed above, neither Antonelli or Antonelli et al. suggests or desires the claimed method including, *inter alia*, applying a defined annealing heat treatment to the  $\gamma/\gamma'$  MCrAlY-coated component to transform the non-equilibrium high temperature  $\gamma/\gamma'$ -microstructure into the equilibrium room temperature microstructure with a  $\alpha$ -Cr phase, as part of the method. Applicants submit that APA does not cure the deficiencies of Antonelli or Antonelli et al. with respect to the method recited in claim 1

Moreover, as discussed at point (10) of the Declaration by Alexander Schnell Under 37 C.F.R. § 1.132 submitted on March 27, 2006, one skilled in the art would not have expected that subjecting an ex-service component to a heat treatment as recited in claim 1, at (c), would provide the advantages resulting from the claimed method. As discussed at point (11) of the Declaration by Alexander Schnell, the present inventors determined that to be able to properly apply the FSECT technique to a  $\gamma/\gamma'$  MCrAlY-coated component that has been used in a high temperature environment, i.e., to obtain a reliable assessment of the ex-service  $\gamma/\gamma'$  MCrAlY coating, the method recited in claim 1 includes the defined heat treatment, which is a part of the method as a whole. It was unexpectedly determined that the claimed method provides a solution to problems associated with the FSECT technique.

Thus, the applied references would not have rendered obvious the recited method. Therefore, claim 1 is patentable. Claims 2-13, which depend from claim 1, are also patentable. Therefore, withdrawal of the rejection is respectfully requested.

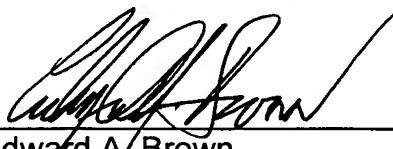
**Conclusion**

For the foregoing reasons, allowance of the application is respectfully requested. If there are any questions concerning this reply, to expedite prosecution, the undersigned can be reached at the number given below.

Respectfully submitted,

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Date: August 31, 2006

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